

Amendments to the Claims

Please amend Claims 1-16 to read as follows.

1. (Currently amended) A print position adjusting method of using a print head having a plurality of arranged nozzles from which ink is ejected to a print medium, to perform alternately a printing operation of scanning the print head in a predetermined direction different from a direction in which said the plurality of nozzles are arranged, to eject ink from said the nozzles to a print medium during the scan, and a paper feeding operation of relatively moving said effecting relative movement of the print medium and said the print head a distance corresponding to a predetermined movement pitch in a direction different from the predetermined direction of scanning direction of said the print head, said the print head being scanned over said the print medium by reciprocating in said the predetermined direction, to enable bidirectional printing in which said the printing operation is performed during both a forward scan and a backward scan, said method comprising:

a mode providing step of providing a plurality of print modes having  
different dot arrangements for a scan of said the print head;  
a mode selecting step of selecting one of the plurality of print modes;  
a determining step of determining an adjustment value that varies a drive  
timing for said the plurality of nozzles between said the forward scan and said the  
backward scan in accordance with the print mode selected in the said mode selecting step;  
and

a printing step of performing said the printing operation using the drive timing for said the nozzles determined on the basis of said the adjustment value determined in said determining step.

2. (Currently amended) A print position adjusting method as claimed in Claim 1, wherein said the plurality of print modes include a multipass print mode in which a printing operation is performed both during the forward scan of said the print head and during the backward scan of said the print head and in which said the movement pitch during said the paper feeding operation is smaller than an arrangement pitch of the nozzles in said the print head, and

said determining step uses different adjustment values in the multipass print mode and in the other print modes.

3. (Currently amended) A print position adjusting method as claimed in Claim 1, wherein impact positions of dots formed by ink droplets ejected from the nozzles driven using a drive timing based on said the adjustment value differ from impact positions of dots formed by ink droplets ejected from the nozzles driven using a drive timing not based on said the adjustment value.

4. (Currently amended) A print position adjusting method as claimed in Claim 2, wherein in said determining step, in the print modes other than said the

multipass print mode, the adjustment value comprises an adjustment value determined in said the multipass print mode plus a predetermined correction value.

5. (Currently amended) A print position adjusting method as claimed in Claim 1, wherein said determining step selects an optimum one of a plurality of print patterns obtained by ejecting ink using different nozzle drive timings and sets said the adjustment value to be a drive timing with which the selected print pattern is printed.

6. (Currently amended) A print position adjusting method as claimed in Claim 5, wherein said the plurality of print patterns are obtained by varying time required after ink has been ejected from an even-number-th even-numbered nozzle in a nozzle arrangement direction and before ink is ejected from a corresponding odd-number-th odd-numbered nozzle in the nozzle arrangement direction and varying ejection timings during the forward and backward scans.

7. (Currently amended) A print position adjusting method as claimed in Claim 1, wherein said the plurality of print modes include a plurality of drive modes having different time intervals at which ink is ejected from said the nozzles to the print medium, and

said determining step uses as the adjustment reference value an adjustment reference value determined for a first drive mode, and if any of the drive modes other than

~~said the~~ first drive mode is selected, uses as the adjustment value ~~said the~~ adjustment reference value plus a predetermined correction value.

8. (Currently amended) An ink jet printing apparatus that uses a print head having a plurality of arranged nozzles from which ink is ejected to a print medium, to perform alternately a printing operation of scanning the print head in a predetermined direction different from a direction in which ~~said the~~ plurality of nozzles are arranged, to eject ink from ~~said the~~ nozzles to ~~a~~ ~~the~~ print medium during the scan, and a paper feeding operation of ~~relatively moving~~ ~~said effecting relative movement of~~ the print medium and ~~said the~~ print head a distance corresponding to a predetermined movement pitch in a direction different from the predetermined direction of scanning direction of ~~said the~~ print head, ~~said the~~ print head being scanned over ~~said the~~ print medium by reciprocating in ~~said the~~ predetermined direction, to enable bidirectional printing in which ~~said the~~ printing operation is performed during both a forward scan and a backward scan, said apparatus comprising:

means providing a plurality of print modes having different dot arrangements for a scan of ~~said the~~ print head;

mode selecting means for selecting one of the plurality of print modes;

determining means for determining an adjustment value that varies a drive timing for ~~said the~~ plurality of nozzles between ~~said the~~ forward scan and ~~said the~~ backward scan in accordance with the print mode selected by the said mode selecting means; and

printing means for performing said the printing operation using the drive timing for said the nozzles determined on the basis of said the adjustment value determined by said determining means.

9. (Currently amended) An ink jet printing apparatus as claimed in Claim 8, wherein said the plurality of print modes include a multipass print mode in which a printing operation is performed both during the forward scan of said the print head and during the backward scan of said the print head and in which said the movement pitch during said the paper feeding operation is smaller than an arrangement pitch of the nozzles in said the print head, and

said determining means uses different adjustment values in the multipass print mode and in the other print modes.

10. (Currently amended) An ink jet printing apparatus as claimed in Claim 9, further comprising creating means for creating a plurality of adjustment patterns by driving said the nozzles while varying a drive timing for said the nozzles, and wherein said determining means selects one of the adjustment patterns created by said creating means and determines a reference value for said the adjustment value on the basis of a drive timing with which the selected pattern is created so that in said the multipass print mode, said the reference value is used as said the adjustment value, whereas in the print modes other than said the multipass print mode, said the reference value plus a predetermined correction value is used as said the adjustment value.

11. (Currently amended) An ink jet printing apparatus as claimed in Claim 10, wherein said the print modes further include a unidirectional print mode in which a printing operation is performed only during the forward scan and a bidirectional print mode in which a printing operation is performed both during the forward scan of said the print head and during the backward scan of said the print head, and

said determining means determines that said the adjustment value on for the bidirectional print mode is said adjustment the reference value plus a predetermined correction value, and said the adjustment value on for the unidirectional print mode is said adjustment the reference value.

12. (Currently amended) An ink jet printing apparatus as claimed in Claim 8, wherein each of said the nozzles ejects a main droplet that is an ink droplet forming a main dot and a satellite droplet that forms a satellite dot near said the main dot, the satellite dot having a smaller dot diameter than said the main dot, and an impact position of said the satellite droplet varying between the forward scan and backward scan of said the print head, and

said determining means determines said the adjustment value so that in connection with a high-density portion formed on the print medium by said the printing means and composed of said the main dots and said the satellite dots, the high-density portion formed during the forward scan is adjacent to the high-density portion formed during the backward scan, in a scan direction of the print head.

13. (Currently amended) An ink jet printing apparatus as claimed in Claim 8, wherein said the print head uses thermal energy to generate bubbles in ink so that pressure generated by the bubbles causes the ink to be ejected as droplets.

14. (Currently amended) An ink jet printing apparatus as claimed in Claim 8, wherein said the plurality of print modes include a plurality of drive modes having different time intervals at which ink is ejected from said the nozzles to the print medium, and

said determining means uses as the adjustment reference value an adjustment reference value determined for a first drive mode, and if any of the drive modes other than said the first drive mode is selected, uses as the adjustment value said the adjustment reference value plus a predetermined correction value.

15. (Currently amended) An ink jet printing system composed comprised of a print position adjusting apparatus that uses a print head having a plurality of arranged nozzles from which ink is ejected to a print medium, to perform alternately a printing operation of scanning the print head in a predetermined direction different from a direction in which said the plurality of nozzles are arranged, to eject ink from said the nozzles to a the print medium during the scan, and a paper feeding operation of relatively moving said the print medium and said the print head a distance corresponding to a predetermined movement pitch in a direction different from the predetermined direction of scanning direction of said the print head, said the print head being scanned over said the

print medium by reciprocating in said the predetermined direction, to enable bidirectional printing in which said the printing operation is performed during both a forward scan and a backward scan; and a host computer connected to the ink jet printing apparatus, said system comprising:

means providing a plurality of printing modes having different dot arrangements for a scan of said the print head;  
mode selecting means for selecting one of the plurality of print modes;  
determining means for determining an adjustment value that varies a drive timing for said the plurality of nozzles between said the forward scan and said the backward scan in accordance with the print mode selected by the said mode selecting means; and  
printing means for driving said the nozzles in accordance with the drive timing for said the nozzles determined on the basis of said the adjustment value determined by said determining means.

16. (Currently amended) An ink jet printing system as claimed in Claim 15, wherein said the plurality of print modes include a multipass print mode in which a printing operation is performed both during the forward scan of said the print head and during the backward scan of said the print head and in which said the movement pitch during said the paper feeding operation is smaller than an arrangement pitch of the nozzles in said the print head,

said system further comprises creating means for creating a plurality of adjustment patterns by driving ~~said the~~ nozzles while varying a drive timing for ~~said the~~ nozzles,

    said host computer comprises adjustment pattern selecting means for transmitting one of ~~said the~~ adjustment pattern patterns, which is selected by the user, to said ink jet printing apparatus, and

    said determining means selects one of the adjustment patterns created by said creating means and determines a reference value for ~~said the~~ adjustment value on the basis of a drive timing with which the selected pattern is created so that during ~~said the~~ paper feeding operation, in ~~said the~~ multipass print mode, ~~said the~~ reference value is used as ~~said the~~ adjustment value, whereas in the print modes other than ~~said the~~ multipass print mode, ~~said the~~ reference value plus a predetermined correction value is used as ~~said the~~ adjustment value.